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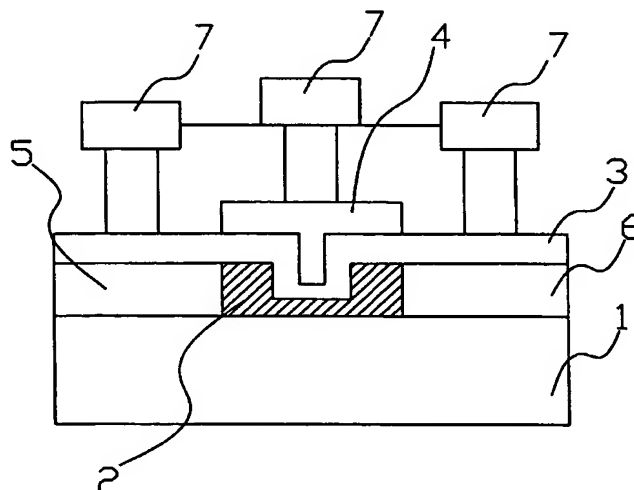
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(54) Title: **PHOTODETECTOR USING MOSFET WITH QUANTUM CHANNEL AND MANUFACTURING METHOD THEREOF**



(57) Abstract: The present invention relates to a photodetector using MOSFET with quantum channels and a method for making thereof. A photodetector using MOSFET with quantum channels according to the present invention comprises a quantum channel formed on an activated SOI wafer; a gate oxide film covering said quantum channel; a gate formed so as to control carrier current at said quantum channel; a source and a drain formed at both ends of said channel area; and metal layers connected with said gate, said source and said drain. Thus, the photodetector according to the present invention can obtain more excellent photocurrent characteristics compared with the existing SOI MOSFET device by forming quantum channels on the SOI MOSFET. The MOSFET with quantum channels according to the present invention can be used as a good photodetector maintaining advantages of the existing MOSFET such as ease in integration and high speed.